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# (12) United States Patent

Caruel et al.

(54) MOVABLE CASCADE TURBOJET THRUST REVERSER HAVING TRANSLATABLE REVERSER COWL CAUSING VARIATION IN JET NOZZLE

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See application file for complete search history.

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#### (57) ABSTRACT

The thrust reverser includes a reverser cowl of which a downstream part of the reverser cowl forms a jet nozzle, cascade vanes fixed upstream from the reverser cowl, thrust reverser flaps, and an actuator. The thrust reverser is translatable under an effect of the actuator between a folded position of the thrust reverser flaps for operation of the nacelle in a direct jet mode, and a deployed position of the thrust reverser flaps for operation of the nacelle in a reverse jet mode. In particular, the stretching of the actuator results in causing a variation in a nozzle section of the jet nozzle as long as the stretching is below a predetermined value, and exposing the cascade vanes and deploying the thrust reverser flaps so as to perform the reverse jet mode beyond the predetermined value.

## 6 Claims, 5 Drawing Sheets



